

CLAIMS

1 An input device comprising:

bioindex detecting means provided within a region including a holding position of the surface of a body to be operated, that user holds in use, and for detecting, for a time period during which user grasps the body to be operated, bioindex of the user through skin of the user; and

bioindex analyzing means for analyzing bioindex which has been detected by the bioindex detecting means.

2 The input device according to claim 1,

wherein the bioindex is at least one of sweating, heartbeat, pulse wave, Galvanic Skin Reflex, Galvanic Skin Response, MV (Micro Vibration), myoelectric potential and SPO2 (blood oxygen saturation level), and combination of these bioindices.

3 The input device according to claim 1,

wherein the bioindex detecting means is detecting means for detecting Galvanic Skin Reflex or Galvanic Skin Response between predetermined two points of palm of one hand of user.

4 The input device according to claim 1,

wherein the bioindex detecting means is pulse wave detecting means for detecting pulse wave of user.

5 The input device according to claim 1,

wherein the bioindex detecting means is temperature detecting means for detecting body temperature of user.

6 The input device according to claim 5,

wherein the temperature detecting means is composed of finger tip temperature detecting means for detecting finger tip temperature provided at a position with which finger tip comes into contact when the finger tip temperature detecting means is grasped by finger of the user, and palm temperature detecting means provided at a position with which palm of the user comes into contact and for detecting palm temperature.

7 The input device according to claim 1, including:

the plural bioindex detecting means,

the input device further comprising:

selector means for selecting at least one bioindex information from bioindex information which have been detected by the plural bioindex detecting means,

wherein the bioindex analyzing means serves to analyze bioindex information which has been selected by the selector means.

8 The input device according to claim 7,

wherein the selector means serves to compare signal-to-noise ratios of output values which have been detected by the plural bioindex detecting means to select an output value having value of higher signal-to-noise ratio.

- 9 The input device according to claim 7,
 wherein the selector means serves to compare detection levels of
 output values which have been detected by the plural bioindex detecting
 means to select an output value having higher detection level.
- 10 The input device according to claim 7,
 wherein the selector means serves to compare auto-correlation
 functions of output values which have been detected by the plural bioindex
 detecting means to select an output value in which correlation has been taken
 to more degree.
- 11 The input device according to claim 7,
 wherein the selector means serves to select one output from outputs
 from the plural bioindex detecting means.
- 12 The input device according to claim 7,
 wherein the selector means serves to select, as an output value, a value
 which has been detected substantially as the same value at the plural bioindex
 detecting means.
- 13 The input device according to claim 7,
 wherein the selector means serves to select, as an output value, an
 average value obtained by averaging values detected at the respective
 bioindex detecting means.
- 14 The input device according to claim 7,

wherein the respective plural bioindex detecting means are similar bioindex detecting means for detecting the same bioindex.

15 The input device according to claim 7,

wherein the respective plural bioindex detecting means are different kinds of bioindex detecting means for detecting the same bioindex by different techniques.

16 The input device according to claim 7,

wherein the respective plural bioindex detecting means are different kinds of bioindex detecting means for detecting different bioindices.

17 The input device according to claim 7,

wherein the input device is provided at an operation input unit of any one of electronic equipments including personal computer, television image receiver, video and/or audio signal recording and/or reproducing device and air conditioner.

18 The input device according to claim 7,

wherein the input device is provided at controller for television game machine.

19 The input device according to claim 7,

wherein each of the plural bioindex detecting means is provided at a control or steering unit that user holds in control or steering at any one of machines to be controlled including automotive vehicle, train, airplane, ship

and industrial machinery.

20 An input method including:

a bioindex detection step of detecting, by detecting means provided within a region including a holding position of the surface of a body to be operated, that user holds in use, bioindex of the user through skin of the user for a time period during which the user holds the body to be operated; and

a bioindex analysis step of analyzing bioindex which has been detected at the bioindex detection step.

21 The input method according to claim 20,

wherein the bioindex is at least one of sweating, heartbeat, pulse wave, skin temperature, Galvanic Skin Reflex, Galvanic Skin Response, MV (Micro Vibration), myoelectric potential and SPO2 (blood oxygen saturation level), or combination of these bioindices.

22 The input method according to claim 20,

wherein the bioindex detection step consists of plural bioindex detection steps,

the input method including:

a selection step of selecting at least one bioindex information from bioindex information which have been detected at the plural bioindex detection steps; and

a bioindex analysis step of analyzing bioindex information which has

been selected at the selection step.

23 The input method according to claim 22,
wherein the respective plural bioindex detection steps detect the same bioindex.

24 The input method according to claim 22,
wherein the respective plural bioindex detection steps detect the same bioindex by different techniques.

25 The input method according to claim 22,
wherein the respective plural bioindex detection steps detect different bioindices.

26 An electronic equipment including an input unit comprising:
bioindex detecting means provided within a region including a holding position of the surface of a body to be operated, with which finger comes into contact when user grasps the body to be operated through the finger in use, and for detecting bioindex of the user through skin of the user for a time period during which the user grasps the body to be operated by finger; and

bioindex analyzing means for analyzing bioindex which has been detected by the bioindex detecting means.

27 The electronic equipment according to claim 26,
wherein the bioindex is at least one of sweating, heartbeat, pulse wave,

skin temperature, Galvanic Skin Reflex, Galvanic Skin Response, MV (Micro Vibration), myoelectric potential and SPO2 (blood oxygen saturation level), and combination of these bioindices.

28 The electronic equipment according to claim 26,
wherein the bioindex detecting means is detecting means for detecting Galvanic Skin Reflex or Galvanic Skin Response between predetermined two points of palm of one hand of user.

29 The electronic equipment according to claim 28,
wherein display means for displaying guide display for operation and information is provided at the front face portion of a casing,
the detecting means being provided at the side surface portion of the casing.

30 The electronic equipment according to claim 28, comprising:
operation means for an operation input,
wherein the detecting means is provided at a position with which finger of user comes into contact of the surface of the operation means.

31 The electronic equipment according to claim 28,
wherein the detecting means is provided at the corner portion of the casing.

32 The electronic equipment according to claim 28,
wherein the bioindex detecting means is pulse wave detecting means

for detecting pulse wave of user.

33 The electronic equipment according to claim 32,
wherein display means for displaying guide display for operation and information is provided at the front face portion of the casing, and
the pulse wave detecting means is provided at the rear face portion opposite to the front face portion of the casing.

34 The electronic equipment according to claim 33,
wherein a detection portion comprising a finger holding cover having internal surface shape curved so as to take substantially the same shape as finger tip shape of the user, and a finger chip insertion portion formed between the finger holding cover and the rear face of the casing is provided at the rear face portion side of the casing,

light emitting means being provided at the inner surface of the finger holding cover, light receiving means as the pulse wave detecting means being provided at the rear face of the casing opposite to the light emitting means.

35 The electronic equipment according to claim 26,
wherein the bioindex detecting means is temperature detecting means for detecting body temperature of user.

36 The electronic equipment according to claim 35,
wherein the temperature detecting means is composed of finger tip temperature detecting means provided at a position with which finger comes

into contact when the temperature detecting means is grasped by the finger of the user and for detecting finger chip temperature, and palm temperature detecting means provided at a position with which palm of the user comes into contact and for detecting palm temperature.

37 The electronic equipment according to claim 36, comprising:

display means serving to display guide display for operation and information at an outer casing front face portion,

wherein one of the temperature detecting means is provided at the side surface portion with respect to the outer casing front face portion.

38 The electronic equipment according to claim 36, comprising:

operation means,

wherein the finger tip temperature detecting means is provided at a position with which finger of user comes into contact of the surface of the operation means.

39 The electronic equipment according to claim 36,

wherein the palm temperature detecting means is provided at the corner portion of the outer peripheral surface side of the casing.

40 The electronic equipment according to claim 36,

wherein a detecting portion comprising a finger holding cover having an internal surface shape curved so as to take substantially the same shape as finger tip shape of the user, and a finger tip insertion portion formed between

the finger holding cover and the rear face of the casing is provided at the rear face portion side of the casing,

the finger tip temperature detecting means being provided at the rear face portion of the casing.

41 The electronic equipment according to claim 26, including:

the plural bioindex detecting means,

the electronic equipment further comprising selector means for selecting at least one bioindex information from bioindex information which have been detected by the plural bioindex detecting means,

wherein the bioindex analyzing means serves to analyze bioindex information which has been selected by the selector means.